



Geology - Interpreting the past to provide for the future



Prepared in cooperation with the
U.S. GEOLOGICAL SURVEY



OPEN FILE REPORT 07-1
Recluse 1:100,000 - scale Surficial Geologic Map

CLASSIFICATION AND DESCRIPTION OF MAP UNITS

(see Rehais and Williams, 1984, for origin of units and their position in the landscape)

Alluvial Deposits

- a** Alluvium—On floodplains and low terraces; silt and sand containing few pebbles of sandstone, limestone, and baked and fused rock (clinker); interbedded with clay or gravel in some places (101)
- f** Alluvial fan and pediment deposits—Upper 1 to 10 feet (0.3 to 3 m) sheetwash alluvium, grades down into sand and silt containing small lenses of angular to subangular gravel composed of clinker, sandstone, and ironstone (201)
- t** Terrace deposits—Alluvium on terraces 16 to 33 feet (5 to 10 m) above present stream level; sand silt and clay containing few pebbles, mostly clinker; may contain buried soil horizons rich in clay and organic material; upper 1 m commonly indurated by clay and calcium carbonate (601)
- td** Older dissected terrace deposits—Gravel and sand containing minor silt; Units higher than 82 feet (25 m) above present Powder River contain gravel of sandstone chert, chalcodony, fossil wood, and quartz, and well-rounded igneous and metamorphic rocks from Bighorn Mountains. Units at lower levels contain increasing amounts of clinker as river level is approached. Locally cemented and crusted with iron and manganese oxides or calcium carbonate (602)

Eolian Deposits

- c** Windblown sand and silt in dunes or irregular sheets; massive to faintly bedded. Eroded from poorly cemented outcrops and deposited downwind in low dunes, now stabilized by grass (701)

Landslide Deposits

- l** Blocks of sandstone, siltstone, and clinker that have moved downslope and broken and mixed with finer sediments. Forms hummocky terrain bounded upslope by crescentic scarps and downslope by lobate toes. Older landslides are stabilized; younger landslides may have fresh scarps and lack vegetation, suggesting they are still active (801)

Playa Lake Deposits

- p** Massive gray clay and silt; alkaline in some places. Deposited by wind and sheetwash into ephemeral lakes; located in natural closed depressions in gentle terrain, probably related to blowouts associated with eolian deposits (1001)

Sheetwash

- s** Alluvium composed of sand silt, and clay with minor interbeds of gravel. Mostly reworked material derived from higher slopes, includes small areas of residuum (1101)

Colluvium

- c** Angular bedrock fragments, mostly of clinker, ranging in size from granules to boulders, in an unsorted matrix of sand silt, and clay. Locally includes small areas of clinker (k), residuum (rR), and small indistinct landslide deposits (l) (1201)

Residuum

- rR** Gray to brown sandy and silty weathered material containing variable amounts of clay; locally contains sheetwash alluvium in upper 3 feet (1 m) or near the surface; grades downward into unweathered bedrock (see Rehais and Williams, 1984, for specific formation) (1401)

Bedrock

- R** Includes Wasatch Formation (yellowish gray to light-brown fine-grained sandstone, light gray siltstone and shale, and coal; poorly consolidated except for a few well-cemented sandstone beds), Fort Union Formation (light-gray to yellowish brown, fine-grained sandstone, light gray siltstone, mudstone, and shale, brown carbonaceous shale, and coal), Lance Formation (dark-gray to brown shale and drab, massive, lenticular concretionary sandstone), Fox Hills Sandstone (white to light-gray sandstone and gray, sandy shale, containing marine fossils), and Pierre Shale (dark-gray to black, concretionary marine shale containing fossils) (1502)

Clinker

- k** Baked and fused bedrock (Wasatch and Fort Union formations) altered by *in situ* burning of coal beds. Mostly hard, dense, red to orange baked shale and siltstone (porcellenic); some black bubbly, sometimes glassy rock (bucheite); resembles volcanic rocks and slag formed by melting of rocks. Gray or white coal ash occurs as layer 2 to 12 inches (5 to 30 cm) thick at base of or within porcellenic zone

Water

- Permanent water bodies

REFERENCES CITED

Rehais, M.C., and Williams, V.S., 1984, Surficial geologic map of the Recluse 30' x 60' Quadrangle, Campbell and Crook Counties, Wyoming: U.S. Geological Survey Coal Investigations Map C-106, scale 1:24,000, color.

INDEX TO 1:100,000-SCALE SURFICIAL GEOLOGIC MAPS OF WYOMING

	112°W	111°W	110°W	109°W	108°W	107°W	106°W	105°W	104°W
45°N	Intergate Lake HSDM 01-1 Clinker HSDM 01-2 Clinker HSDM 01-3 Clinker HSDM 01-4 Clinker HSDM 01-5 Clinker HSDM 01-6 Clinker HSDM 01-7 Clinker HSDM 01-8 Clinker HSDM 01-9 Clinker HSDM 01-10 Clinker HSDM 01-11 Clinker HSDM 01-12 Clinker HSDM 01-13 Clinker HSDM 01-14 Clinker HSDM 01-15 Clinker HSDM 01-16 Clinker HSDM 01-17 Clinker HSDM 01-18 Clinker HSDM 01-19 Clinker HSDM 01-20 Clinker HSDM 01-21 Clinker HSDM 01-22 Clinker HSDM 01-23 Clinker HSDM 01-24 Clinker HSDM 01-25 Clinker HSDM 01-26 Clinker HSDM 01-27 Clinker HSDM 01-28 Clinker HSDM 01-29 Clinker HSDM 01-30 Clinker HSDM 01-31 Clinker HSDM 01-32 Clinker HSDM 01-33 Clinker HSDM 01-34 Clinker HSDM 01-35 Clinker HSDM 01-36 Clinker HSDM 01-37 Clinker HSDM 01-38 Clinker HSDM 01-39 Clinker HSDM 01-40 Clinker HSDM 01-41 Clinker HSDM 01-42 Clinker HSDM 01-43 Clinker HSDM 01-44 Clinker HSDM 01-45 Clinker HSDM 01-46 Clinker HSDM 01-47 Clinker HSDM 01-48 Clinker HSDM 01-49 Clinker HSDM 01-50 Clinker HSDM 01-51 Clinker HSDM 01-52 Clinker 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